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BOOK REVIEWS

Principles of Electrical Machine Construction, by W. Seiz, published by Schiele and Schoen, Berlin 1947. Price 15.75 RM (pp. 286, DIN A5)

This book, authored by Dr. Walter Seiz, Professor at the Munich Institute of Technology, will be valuable for all students and practicing engineers in the electrical machine construction field.

As a summary of the various fundamental electrical laws and concepts, the first chapter serves as a lucid and simple introduction to this vast field. The various sections of the next chapter, entitled "D.C. Machinery," discuss the construction, components and circuits of specific motors and generators as well as their applications and performance. The second main grouping, that of AC and polyphase machinery is introduced by a chapter headed "Alternating Current Principles." The latter is in turn followed by a discussion of transformers. The applications, fundamentals and construction of transformers is discussed, with particular attention to three-phase transformers and such special-purpose types as economy, multiwinding and instrument transformers. The other chapters are all based on the fundamental principles developed in the initial chapters and permit full appreciation of the many problems encountered in the design of AC machinery. The chapter headings are:

(V) Overlapping three-phase windings and rotating field

(VI) The induction machine (three-phase induction machine with slip-ring rotor, induction machine with

squirrel-cage rotor, special types etc)

(VII) The three-phase synchronous machine

(VIII) The AC commutator machine (single-phase series wound motor, construction of AC commutator machines, the single-phase repulsion motor, operation of induction motors and polyphase commutator machines in cascade)

(IX) Electric motor drives

The many illustrations and sample problems, in addition to the good presentation, make this text easy to understand. A thorough and well organized index rounds out the book which is certain to gain many friends.

F. Rühmann

~~Brief Reports~~ - Alpine Radio Communications

The Technical Reports of the Swiss Postal, Telegraph and Telephone Administration furnish the following technical details on the UHF communications system established by the above agency in those Alpine hostels and isolated mountain inns where wire communication is impractical for technical and economic reasons. Stations at the top and at the foot of each mountain are equipped with both a receiver and a transmitter as well as with an automatic dial system. Traffic is in the 4 to 7.5 meter band and is received and transmitted with directional antennas. Mountaintop stations which in general do not have access to power lines are supplied from storage batteries which, in turn, are periodically

recharged from a small generator driven by a gasoline engine.

From every mountain station calls can be made at any time to any telephone, but reception at the mountain station is limited to alternate half-hour periods in order to conserve electricity. Where a reliable power supply is available, the mountaintop station may be used continously. The user operates the device like an ordinary telephone, i.e. lifting and replacing the receiver automatically switches the system on and off. After experimental operation for several years the system has been opened to the public. At present three continously operated installations are in operation, as well as six others receiving at half-hour intervals only.

III

Proceedings of the German Academy of Sciences in Berlin

The Proceedings of the German Academy of Sciences in Berlin, which first appeared in 1882 and which had ceased publication in 1938, are now being again published by the Akademie-Verlag Berlin. As before they will appear in two parts: a philosophical-historical and a mathematical-scientific part. Five pamphlets are scheduled for publication within the next few weeks:

Diedrich Westermann: Relationships and Interrelationships of African Languages.

Robert Rössle: On the Theory of Abdominal Typhus.

Alexander Dinghas: A Generalization of a Theorem by Hilbert on the Behavior of a Quadratic Form related to the Legendre polynomials.

Hans Ertel: A Method for the Approximate Prediction of the Motion of Air Masses.

Hans Harting: Indices of Refraction of some Halide Crystals.

~~NEWS OF THE DAY~~

Annual Convention of the German Society of Electrical Engineers in Wuppertal.

IV

Vol. 2 No. 9 Dec 45

The reborn Society of German Electrical Engineers (VDE) met in convention for the first time since the collapse of the German armies. Sessions were held from 5 October to 8 October at Wuppertal, the present seat of the ~~organizations~~ national headquarters. More than 800 members attended, but unfortunately the number of representatives from Berlin and the East Zone was small.

The first day was reserved for meetings of the executive board, the board of directors and the various committees. In the evening the members met for a social gathering in the convention hall of the Zoo. On the second day some 40 papers were presented in 10 technical sessions, all dealing with current problems and developments in electrical engineering. They met with great interest, and participation in the sessions was so active that the meeting rooms were often unable to accommodate all those who wished to attend. As usual, all papers will be published in the "Transactions" so that we do not need to go into details here. The plenary session was held on the third day. The first order of business was a memorial ceremony for the deceased president,

Professor Doctor of Engineering, Kurt Fischer. The executive committee then reported on organizational matters and presented a draft of the new by-laws. According to the proposal the Society will be a confederation of local groups and, in contrast to the old Society of German Electrical Engineers, will not accept individual members. All individuals and firms who wish to affiliate themselves with the organization may do so only through their respective local(district) groups. This finally clarifies the situation and does away with the many disputes which had plagued the old association. The outgoing members of the executive committee, with Director-General Dr. Reinach as chairman were asked to continue in office until a new board could be elected according to the new by-laws.

Professor Dr. P. Kossler delivered the main address. It was entitled "Duties and Responsibilities of the Engineering Profession". He focussed attention on the contradictory evaluations of engineering: one group praises it as the pioneer of progress toward a way of life more worthy of man, others damn it as the demon of spiritual degeneration and annihilation.

Like the arts and sciences, engineering must be classed as an irrational human motivation which in itself is neither good nor bad. Engineering is not an extra-human force. No one denies that engineering progress may have led to a good deal of danger and damage. The effective use of natural forces has led to a manifold increase of the powers available to mankind. It has, however, been accompanied by a decreasing sense of responsibility

caused by weakening religious ties. Yet, technical progress cannot be held responsible for the collapse of humanitarianism. It comes about just as often in the absence of technical progress whenever the necessary ethical foundations no longer exist. The reestablishment of these foundations, especially of the Christian, humanitarian principle of love of one's fellow man, is the primary educational task of our time. In this, engineering has great ethical value as a pedagogic tool, for it demands truth, precision, humility, respect and a sense of responsibility. Thus engineering is also destined to become a truly humanitarian endeavor.

In the afternoon the members met for a lovely drive through the local country side, so rich in natural beauty and historical significance. The next day was devoted to a series of inspection trips through various technical installations. Thanks to the selfless work of the business office of the Society the difficult task of organizing a meeting of such major proportions was solved in an entirely satisfactory manner.

K. W. Wagner

V. The Bergisch-Land Technical Institute

Technische Akademie Bergisch-Land e.V.

Vol. 2 No. 1 Dec. 48

The Bergisch-Land Technical Institute was founded with the cooperation of the cities, counties, industries and technical societies of the Bergisch-Land. In the presence of many professional engineers, Lord-Mayor Daum inaugurated the institute with an address at Wuppertal on 7 October 1948. The director of the Institute, Professor Doctor of Engineering H. Schwenkhagen, delivered a stimulating address prepared especially for this occasion. It was entitled "The Threefold Root of the Engineering Profession".

The Institute sees as its task the continued, planned professional development of engineers already active in industry. For this purpose it will offer courses and laboratory sessions in mathematics, physics, civil engineering, architecture, mechanics, mechanical and electrical engineering and general subjects. Courses will be conducted by outstanding authorities in their respective field. 11 are permanent staff members and 23 guest lecturers have been invited. An extensive curriculum will be prepared from which prospective students may choose the courses of interest to them. Actual instruction in a course will begin whenever a sufficient number of applications has been received. The address of the Institute is Wuppertal-Vorwinkel, City Hall.

K. W. Wagner